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KRISHNAN, VIVEK V				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/776,297

Applicant(s)

EILAM ET AL.

Examiner

VIVEK KRISHNAN

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is a Non-Final Office Action Correspondence in response to a Request for Continued Examination for U.S. Application No. 10/776297 filed on August 13, 2008. Claims 1-25 are pending.

Response to Arguments

1. Applicant's arguments with respect to Claim Rejections under 35 U.S.C. 102 have been fully considered but they are not persuasive.

As to Applicant's arguments regarding Claims 1-6, 9-14, 19, and 21-25:

As rejected in the Final Rejection dated April 15, 2008, Osborn discloses generating an application abstract resource description describing a resource structure that is derived from the object specification mentioned above and is mapped to resources in the system. Furthermore, Osborn discloses obtaining an abstract resource description describing virtual hardware resource objects and using the abstract resource description to create a matching resource structure to satisfy the requirements of the service environment. The object specification, or application specification, anticipates the Service Environment Model as claimed.

Furthermore, as mentioned in the Final Rejection, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. A simple recitation of the claim language along with an assertion that the references do not anticipate the claims does not constitute an adequate argument.

2. Applicant's arguments with respect to Claim Rejections under 35 U.S.C. 103 have been fully considered but they are not persuasive.

As mentioned in the Final Rejection, in view of the aforementioned argument that Osborn discloses each and every limitation of Claims 1 and 21, Applicant's argument is moot.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites "an initial new desired state of said service environment". Claim 2 recites "another new desired state of said service environment". Applicant's disclosure filed February 11, 2004, does not provide any indication, explicit or implicit, of separate "initial" and "another" service environment states.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6, 9-14, 19, and 21-25 are rejected under 35 U.S.C. 102(c) as being anticipated by U.S. Patent No. 7,050,807 filed on June 12, 2000 by Osborn (denoted herein as “Osborn”).

7. As for claims 1 and 21, Osborn discloses a method comprising (an apparatus comprising means for) generating a Concrete Model, said Concrete Model for describing a structure of resources implementable over a computing utility infrastructure, created using infrastructure elements, and satisfying a set of service requirements, said Concrete Model being generated from a Service Environment Model and an Infrastructure Model, said Service Environment Model being a description of characteristics of a desired service and being independent of the infrastructure, said Infrastructure Model encapsulating knowledge on elements of the infrastructure, including resource instances, resource types, resource configuration, resource capabilities and constraints, said step of generating comprising, said step of generating comprising the steps of:

(means for) obtaining the Service Environment Model of a service environment, said Service Environment Model describing a set of requirements on an initial new desired state of

said service environment (Osborn discloses obtaining an object specification, or application specification, with virtual application objects of an application which describe requirements associated with the application, see column 3 lines 44-59, column 4 lines 15-23, and Figure 2 reference number 68);

(means for) getting the Infrastructure Model describing both resources and an organization of the resources in the computing utility infrastructure, said Infrastructure Model being encapsulated in a knowledge subsystem (Osborn discloses obtaining a hardware abstract resource description, or hardware specification, in a system describing both resources and an organization of the resources, see column 3 lines 17-44 and Figure 8); and

(means for) forming the Concrete Model from the Service Environment Model and the Infrastructure Model, said Concrete Model describing a resource structure refining the Service Environment Model and being mappable to said knowledge subsystem so that an implementation of the Concrete Model satisfies requirements and characteristics described in the Service Environment Model (Osborn discloses generating an application abstract resource description describing a resource structure, see Figure 9, that is derived from the object specification mentioned above and is mapped to resources in the system, see column 3 lines 60-67 and column 4 lines 1-14).

8. As for claim 2, Osborn discloses each and every limitation of claim 1. Osborn further discloses wherein the step of obtaining a Service Environment Model of the service environment includes receiving a description of a set of requirements on a new desired state of said service environment (Osborn discloses the object specification, or application specification, includes

virtual application objects that describe requirements on a new desired state of the service environment of the application, see column 3 lines 44-59, column 4 lines 15-23, and Figure 2 reference number 68).

9. As for claim 3, Osborn discloses each and every limitation of claim 1. Osborn further discloses wherein said Service Environment Model description being independent of the computing utility infrastructure, and said Concrete Model providing provisioning and managing of computing services in a computing utility system, based on a high level description of the characteristics and structure of desired computing services and a representation of the computing utility infrastructure used as a platform to implement the said computing services (Osborn discloses the object specification, or application specification, that does not depend on to the computing utility infrastructure, see column 3 lines 44-59, column 4 lines 15-23, and Figure 2 reference number 68).

10. As for claim 4, Osborn discloses each and every limitation of claim 1. Osborn further discloses wherein said service environment is an entity taken from a group of entities consisting of:

- a Web site,
- an on-line gaming service,
- a scientific computation service,
- an e-business service,

a computing service (Osborn discloses a service environment for an application, see column 3 lines 60-67 and column 4 lines 1-14),
and any combination of these.

11. As for claim 5, Osborn discloses each and every limitation of claim 1. An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein for causing generation of a Concrete Model, the computer readable program code means in said article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1 (Osborn discloses the system of Figures 1 and 2 to effect the steps of claim 1, see Figures 1 and 2).

12. As for claim 6, Osborn discloses each and every limitation of claim 1. Osborn further discloses wherein the step of getting an Infrastructure Model includes an action taken from a group of actions consisting of:

querying at least one knowledge subsystem entity (Osborn discloses obtaining the hardware abstract resource description by obtaining information from a hardware resource manager, see column 3 lines 28-43);

querying Resource Managers (Osborn discloses obtaining the hardware abstract resource description by obtaining information from a hardware resource manager, see column 3 lines 28-43),

querying Resource Instance Services,

querying a best practices catalog;

obtaining knowledge of available resource types (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group types, see column 5 lines 52-56 and Figure 8);

obtaining knowledge of resources constraints (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group designations and other constraints inherently associated with resource attributes, see column 6 lines 3-20 and Figure 8); obtaining knowledge of resource capabilities (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource attributes, see column 6 lines 45-65 and Figure 8);

obtaining knowledge of infrastructure constraints (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource group designations and other constraints inherently associated with resource attributes, see column 6 lines 3-20 and Figure 8);

obtaining knowledge of infrastructure capabilities (Osborn discloses obtaining the hardware abstract resource description by obtaining information on resource attributes, see column 6 lines 45-65 and Figure 8);

obtaining knowledge of infrastructure best practices patterns; and
any combination of these actions.

13. As for claim 9, Osborn discloses each and every limitation of claim 1. Osborn further discloses a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for generating a Concrete

Model, said method steps comprising the steps of claim 1 (Osborn discloses the system of Figures 1 and 2 that comprise the steps of claim 1, see Figures 1 and 2).

14. As for claim 10, Osborn discloses each and every limitation of claim 1. Osborn further discloses further comprising using said generating said Concrete Model to enforce a policy based service provider's best practices in implementation of Service Environments in the computing utility infrastructure (Osborn discloses generating the Concrete Model to enforce the requirements needed to run the application, see column 3 lines 1-8 and column 4 lines 15-23).

15. As for claim 11, Osborn discloses each and every limitation of claim 10. Osborn further discloses wherein the best practices are encoded as patterns in a best practices catalog and used in the step of forming said Concrete Model (Osborn discloses the requirements are derived from an application object library column 3 lines 9-12).

16. As for claims 12 and 22, Osborn discloses each and every limitation of claims 1 and 21. Osborn further discloses (means for) employing said Concrete Model to generate provisioning actions, said provisioning actions, when executed, create a resource structure that matches the description in the Concrete Model, said resource structure satisfies said set of requirements on new desired state of said service environment (Osborn discloses obtaining an abstract resource description describing virtual hardware resource objects and using the abstract resource description to create a matching resource structure to satisfy the requirements of the service environment, see column 3 lines 60-67).

17. As for claim 13, Osborn discloses each and every limitation of claim 12. Osborn further discloses employing said provisioning to enforce a policy based service provider's best practices in implementation of service environments in the computing utility infrastructure (Osborn discloses employing provisioning to enforce the requirements needed to run the application, see column 3 lines 1-8, 60-67 and column 4 lines 15-23).

18. As for claim 14, Osborn discloses each and every limitation of claim 13. Osborn further discloses wherein the best practices are encoded as patterns in a best practices catalog and used in the step of forming the Concrete Model (Osborn discloses the requirements are derived from an application object library column 3 lines 9-12).

19. As for claims 19 and 24, Osborn discloses each and every limitation of claims 1 and 21. Osborn further discloses (means for) employing said Concrete Model to generate a Resource

Manager for a composite resource, and provisioning and managing computing services in a computing utility system, based on a high level description of the characteristics and structure of desired computing services and a representation of the computing utility infrastructure used as a platform to implement the said computing services (Osborn discloses that a hardware resource manager employs the application hardware resource specification and a hardware resource diagram, which represents a composite resource, see column 6 lines 3-20 and Figure 8, to allocate the composite resource and thereby create a resource manager for the composite resource, see column 7 lines 1-25).

20. As for claim 23, Osborn discloses each and every limitation of claim 21. Osborn further discloses a computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing generation a Concrete Model, the computer readable program code means in said computer program product comprising readable program code means for causing a computer to effect the functions of claim 21 (Osborn discloses the system of Figures 1 and 2 to effect the functions of claim 21, see Figures 1 and 2).

21. As for claim 25, Osborn discloses each and every limitation of claim 1. Osborn further discloses where the step of generating a Concrete Model is performed by a user taken from a group of user's consisting of:

a service provider,

a customer of a service provider,

a company owning an IT infrastructure (Osborn discloses an application developer, see column 3 lines 1-15 and column 8 lines 12-23), and
a utility provider (Osborn discloses an application developer, see column 3 lines 1-15 and column 8 lines 12-23).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 1 above, and in further view of U.S. Patent Application Publication No. US 2003/0208473 A1 filed on January 28, 2000 by Lennon (denoted herein as "Lennon").

24. As for claim 7, Osborn discloses each and every limitation of claim 1. Osborn does not explicitly disclose, but Lennon discloses wherein the step of forming a Concrete Model includes: at least one refinement step comprised of selecting a node and replacing said node with a sub graph structure to obtain an intermediary model which is an input to a next refinement step (Lennon discloses selecting the description object in a resource description, see DDF on page 9 paragraphs 115 and 116, and replacing it with a sub tree structure, see Figure 5, to produce a description object model, see page 11 paragraphs 154-156 and Figures 2A and 2B);

repeating the step of selecting and replacing until a resulting intermediary model is mappable to said knowledge subsystem (Lennon discloses the description object model, or DesOM, represents resources and resource relationships mappable to the system, see page 11 paragraphs 154-156 and Figures 2A and 2B).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of forming a Concrete Model and of a description of resources (Service Environment Model) to include refining the description of resources to produce a Concrete Model in order to provide a consistent method of describing resources and thereby utilizing resource descriptions, see page 1 paragraph 6 of Lennon.

25. As for claim 8, Osborn and Lennon in combination disclose each and every limitation of claim 7. Lennon further discloses wherein said step of replacing comprises a limitation taken from a group of limitations consisting of:

querying a best practices catalog;

generating sub graph patterns dynamically;

employing graph matching techniques to obtain said sub-graph structure (Lennon discloses matching the sub tree structure to the description object, see page 11 paragraph 155 and Figure 5);

employing graph merging techniques to obtain said sub-graph structure (Lennon discloses merging the sub tree structure to the description object, see page 11 paragraph 155 and Figure 5);
any combination of these limitations.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of forming a Concrete Model and of a description of resources

(Service Environment Model) to include refining the description of resources to produce a Concrete Model in order to provide a consistent method of describing resources and thereby utilizing resource descriptions, see page 1 paragraph 6 of Lennon.

26. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 12 above, and in further view of U.S. Patent No. 6,332,023 B1 issued on December 18, 2001 to Porter et al. (denoted herein as "Porter").

27. As for claim 15, Osborn discloses each and every limitation of claim 12. In addition, Osborn and Porter in combination disclose wherein step of provisioning includes a task taken from a group of tasks consisting of:
creating a new service environment (Osborn discloses allocating resources to an application to create a service environment, see column 3 lines 60-67),
changing the combination of resources allocated to a service environment (Osborn discloses allocating resources to an application to create a service environment, see column 3 lines 60-67. In addition, Porter discloses de-allocating resources allocated to a service environment, see column 3 lines 40-50),
changing the configuration of resources allocated to a service environment (Porter discloses changing the configuring of a resource that has been allocated to a service environment, see column 3 lines 30-40), or
destroying a service environment , or
any combination of the above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning to include the ability to change the configuration of resources in order to provide for a more flexible allocation of resources, see column 2 lines 35-54 of Porter.

28. As for claim 16, Osborn and Porter in combination disclose each and every limitation of claim 15. Porter further discloses wherein changing the configuration of resources allocated to a service environment include:

changing the local state of a resource (Porter discloses updating static and dynamic resource attributes, see column 1 lines 66-67, column 3 lines 1-20), or
changing the way the resource is configured to work with other resources.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning to include the ability to change the configuration of resources in order to provide for a more flexible allocation of resources, see column 2 lines 35-54 of Porter.

29. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 1 above, and in further view of U.S. Patent Application Publication No. US 2004/0128397 A1 filed on September 10, 2003 by Glasmann et al. (denoted herein as "Glasmann").

30. As for claim 17, Osborn discloses each and every limitation of claim 1. Osborn does not explicitly disclose, but Glasmann discloses regenerate provisioning instructions whenever at least one of the following occurs:

infrastructure characteristics change (Glasmann discloses allocating resources when there is a change in the topology, see page 1 paragraph 5, 8, and 9), and

requirements of a service change.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning resources to include providing resources when infrastructure characteristics change in order to provide for adaptive resource checking and reacting to topology changes (see page 1 paragraphs 7 and 10 of Glasmann).

31. As for claim 18, Osborn and Glasmann in combination disclose each and every limitation of claim 17. Glasmann further discloses wherein the infrastructure characteristics include a characteristic taken from a group of characteristics consisting of:

types of resources in the infrastructure,

capabilities of said resources (Glasmann discloses topology changes include changes in the capabilities of a resource, see page 1 paragraphs 4 and 5),

configuration of said resources (Glasmann discloses topology changes include changes in the configuration of a resource, see page 1 paragraphs 4 and 5),

constraints on configuration of said resources,

best practices patterns as defined in the best practices catalog,

and any combination of the above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Osborn's disclosure of provisioning resources to include providing resources when infrastructure characteristics change in order to provide for adaptive resource checking and reacting to topology changes (see page 1 paragraphs 7 and 10 of Glasmann).

32. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osborn, as applied to claim 19 above, and in further view of U.S. Patent No. 6,901,446 B2 filed on February 28, 2001 by Chellis et al. (denoted herein as "Chellis").

33. As for claim 20, Osborn discloses each and every limitation of claim 19. Osborn does not explicitly disclose, but Chellis discloses wherein said Resource Manager provides a set of resource manager methods taken from a group of resource manager methods consisting of: creating composite resources based on a Concrete Model (As mentioned above, Osborn does disclose a resource manager for a composite resource. However, Osborn does not explicitly disclose, but Chellis discloses a resource manager capable of creating a composite resource, or set of interdependent resources, based on defined resource requirements for a service, see column 3 lines 36-59), changing composite resources based on a Concrete Model (As mentioned above, Osborn does disclose a resource manager for a composite resource. However, Osborn does not explicitly disclose, but Chellis discloses a resource manager capable of changing a composite resource, or

set of interdependent resources, based on defined resource requirements for a service, see column 3 lines 36-67 column 4 lines 1-27 and column 9 lines 55-67), destroying composite resources based on a Concrete Model, and any combination of these methods.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Osborn's disclosure of a resource manager the ability to create and change composite resources in order to provide increased functionality to the resource manager and, in addition, to provide for more robust allocation of composite resources (see column 2 lines 44-67 and column 3 lines 1-6).

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 6,786,901 B1 issued to Osborn et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIVEK KRISHNAN whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VK

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145